

R E M A R K S

The office action of June 14, 2004 has been reviewed and its contents carefully noted. Reconsideration of this case, as amended, is requested. Claims 1 through 21 remain in this case, with claims 13 through 16 being withdrawn, claim 3 being cancelled, claim 21 being added, and claims 1, 11, and 12 being amended by this response. Claim 11 was amended to fix typographical errors. No new matter has been added.

Double Patenting

Claim 4 was objected to under 37 CFR 1.75 as being a substantial duplicate of claim 3.

Applicant has cancelled claim 3 and has added new claim 21. Claim 3 as presented in the Applicant's office action response of February 27, 2004 contained a duplicate of claim 4 as claim 3. New claim 21 is claim 3 that was originally filed with the application. No new matter has been added. Applicant believes that these amendments have fully addressed the Examiner's rejections, and the claims are now in condition for allowance. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection(s) under 35 U.S.C. §112

Claims 1-12 and 17-20 were rejected under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, specifically because the expression "all of the remaining austenite" in step (e) has no antecedent basis.

The amendments made to claim 1 and 12 are fully supported by the specification on page 7, lines 5-18. Applicant believes that the amendments of claim 1 and 12 have fully addressed the Examiner's rejections, and the claims are now in condition for allowance. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection(s) under 35 U.S.C. §103

Claims 1-12 and 17-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 3901,739) Mandoki.

Applicant respectfully disagrees.

As can be seen in Figure 1 of Mandoki cools the steel through the M_S temperature, past point C, whereupon conversion of the remaining austenite into martensite takes places at a constant temperature **below M_S** , between 150°C to 470°C, with all of the austenite being transformed by point D (see Figure 1, page 4-5, lines 66-10).

Applicant's claim 1 and 12 as amended specifically states a step of, "holding said ferrous article in said thermal bath at least 20°F but no more than 500°F above M_S for a period from 10 minutes to three hours whereby said ferrous article comprises austenite and at least 60% bainite," which is supported by the specification on page 8, lines 4-14 and in Applicant's Figure 1. As stated in the application, step (d) of the method ends in the shaded area defined by points A, B, C, and D as shown in Applicant's Figure 1. Point A of the shaded box is equivalent to holding the ferrous materials at $M_S + 500^\circ\text{F}$ for 10 minutes, point B of the shaded box is equivalent to holding the ferrous materials at $M_S + 500^\circ\text{F}$ for 3 hours, point C of the shaded box equivalent to holding the ferrous materials at $M_S + 20^\circ\text{F}$ for 10 minutes, and point D of the shaded box is equivalent to holding the ferrous materials at $M_S + 20^\circ\text{F}$ for 3 hours.

Exhibit A, enclosed with this response, shows the cooling curve Q of Mandoki superimposed on Applicant's plot of time and temperature of the isothermal transformation of ferrous materials. As shown in the exhibit, the holding of the ferrous materials by Mandoki takes place below the M_S temperature line and does not occur at least 20°F, but no more than 500°F above M_S as required by Applicant's claims 1 and 12.

Applicant believes the claims, as amended, are patentable over Mandoki (USPN 3,901,739). Dependent claims 2-11 and 17-20, being dependent upon and further limiting independent claims 1 and 12, should also be allowable for that reason, as well as for the additional recitations they contain. Reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion

Applicant believes the claims, as amended, are patentable over the prior art, and that this case is now in condition for allowance of all claims therein. Such action is thus respectfully requested. If the Examiner disagrees, or believes for any other reason that direct contact with Applicants' attorney would advance the prosecution of the case to finality, he is invited to telephone the undersigned at the number given below.

"Recognizing that Internet communications are not secured, I hereby authorize the PTO to communicate with me concerning any subject matter of this application by electronic mail. I understand that a copy of these communications will be made of record in the application file."

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